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ABSTRACT

In the 1980s Standard Grade curricula replaced Ordinary Grade curricula as the main academic course of study in the last 2 years of compulsory schooling (S3 and S4) in Scotland. This brief report examines the impact of the Standard Grade reform, focusing on changes in inequality of attainment for students from different social origins. It is based on analyses of examination scores in English, mathematics, and science, the first subjects to be introduced in the new curriculum. Data are from the Scottish Young People's Surveys of students who completed S4 in 1984, 1986, 1988, and 1990. The sample totalled 20,756 students in 412 schools. During the period in which Standard Grade was introduced, the gap between advantaged and disadvantaged students decreased. This inequality declined more rapidly in the schools that implemented Standard Grade first. Inequality declined because students from lower social class backgrounds had better opportunities to take academic courses. The drop in inequality is likely to be due in part to the new curriculum. Inequalities in gaining awards (successful course completion) declined, but inequalities in the top awards did not change significantly. Students from higher social class backgrounds maintained their advantage at the top levels of examination scores. Results suggest that curriculum reform can be an effective strategy for change, but that it does not fully resolve the problem of educational inequality. (SLD)

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CES Briefing

ED 403 350

Improving Opportunities for Disadvantaged Students: Changes in S4 Examination Results, 1984-1990

by Adam Gamoran

No. 6, July 1996

In the 1980s, Standard Grade replaced Ordinary Grade as the main academic course of study for the last two years of compulsory schooling (S3 and S4) in Scotland. This *Briefing* examines the impact of the Standard Grade reform, focusing on changes in inequality of attainment for students from different social origins. It is based on analyses of examination scores in English, mathematics, and science, the first subjects to be introduced for Standard Grade.

- **Students** from socially and economically advantaged families are more successful in secondary school than students from disadvantaged families. However, during the period in which Standard Grade was implemented, the gap between advantaged and disadvantaged students diminished.
- **Inequality** declined more rapidly in schools that implemented Standard Grade first. Thus, the drop in inequality is likely to be due in part to the Standard Grade reform.
- **Inequality** declined because students from lower social class backgrounds had better opportunities to take academic courses, and they usually obtained awards in the subjects they studied.
- **Although** inequalities in gaining awards declined substantially, inequalities in the top awards did not change significantly. Students from higher social class backgrounds have maintained their advantage at the top levels of examination scores.
- **Curriculum** reform can be an effective strategy for change, but it does not fully resolve the problem of educational inequality.

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Background

When the Standard Grade curricula and examinations replaced those of the Ordinary Grade during the 1980s, its aims included: (a) to increase the breadth of studies undertaken by students during S3 and S4; (b) to challenge students at the full range of academic abilities; and (c) to improve access to national certification in academic subjects for all students, especially those from disadvantaged family backgrounds.

Progress is occurring towards the first two goals. Since the implementation of Standard Grade, more and more secondary students are studying a wider range of subjects, and higher and higher proportions of students are obtaining awards in these subjects. What of the third goal? Are socially disadvantaged students improving their standing relative to their more privileged peers? *CES Briefing No. 3* reported that social class differences in studying some academic subjects, such as mathematics and science, diminished after the introduction of Standard Grade. Has this change led to lower social inequality in attainment at the end of compulsory schooling?

This *Briefing* examines changes in inequality of attainment at the end of S4, using nationally representative data from the Scottish Young People's Surveys of students who completed S4 in 1984, 1986, 1988, and 1990. We focus on English, mathematics, and science, the first subjects to be implemented in Standard Grade. In 1984, none of these subjects were offered for Standard Grade (except for pilots), and by 1990, almost all state-supported secondary schools offered Standard Grade courses in these subjects. We examine three outcomes: the average grade of O/S (Ordinary Grade/ Standard Grade) result; achieving any graded O/S award; and achieving an O/S "pass" at grades 1-3 (formerly A-C).

Average grade

In Scotland as elsewhere, students from socially and economically advantaged families tend to attain greater success in formal education than students from disadvantaged families. Over time, however, the gap between advantaged and disadvantaged students in Scotland has diminished. During the period in which Standard Grade was implemented in English, mathematics, and general science, inequality within schools declined. For example, consider a hypothetical "advantaged" student, whose parents are professionals and left school after age 16, in contrast to a "disadvantaged" student, whose parents are unskilled and left school before age 16. In 1984, the advantaged student would have scored about four grades higher on the Ordinary Grade examinations in English and in mathematics than the disadvantaged student. By 1990 these gaps would have shrunk to about three grades in each subject.

These changes reflect the transition from Ordinary Grade, which was designed for the more able student, to Standard Grade, which was open to all. Support for this interpretation comes from 1986 and 1988, when some schools had already implemented Standard Grade and others had not. Schools that adopted Standard Grade first tended to reduce inequality of attainment more quickly.

Obtaining an O/S award

Inequality within schools declined because students from lower social class backgrounds had better opportunities to take academic courses, and they usually obtained awards in the subjects they studied. Prior to Standard Grade, many disadvantaged students were left out of the academic curriculum, and had no chance for national certification. That is no longer the case.

Figure 1
Changes in probabilities of obtaining an O/S award, 1984 - 1990

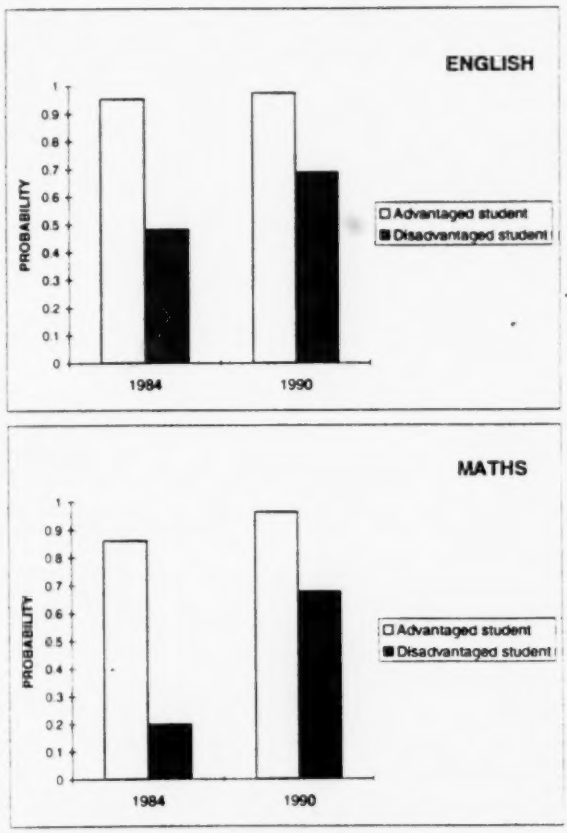


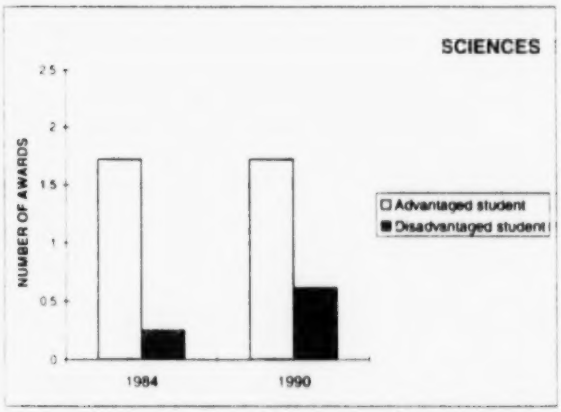
Figure 1 shows how the probability of obtaining an award in English and mathematics changed from 1984 to 1990. In 1984, the hypothetical advantaged student

had about a 95% likelihood of receiving an award in English and a 86% chance in mathematics. By contrast, the odds for the disadvantaged student were about 48% in English and 20% in mathematics. These inequalities diminished sharply by 1990: the odds for the advantaged student were close to 97% in both subjects and the odds for the disadvantaged student had risen to about 68% in both subjects. Thus, gaps of 47 percentile points in English and 66 percentile points in mathematics dropped to less than 30 percentile points. Inequality within schools remains, but at a lower level.

In part, these changes reflect the fact that socially and economically advantaged students already had very high odds of receiving an award in 1984, whereas disadvantaged students started out far below the ceiling. Expansion of opportunity, therefore, was bound to reduce the gap. But these changes are measured using statistical techniques that take account of the expansion, and the same pattern of results appears when we compare schools that adopted Standard Grade within a given year with those that did not.

In science, Standard Grade introduced a new course in "general" science. Figure 2 shows that, between 1984 and 1990, inequality declined in the number of awards obtained in a science subject (including science, biology, chemistry, and physics).

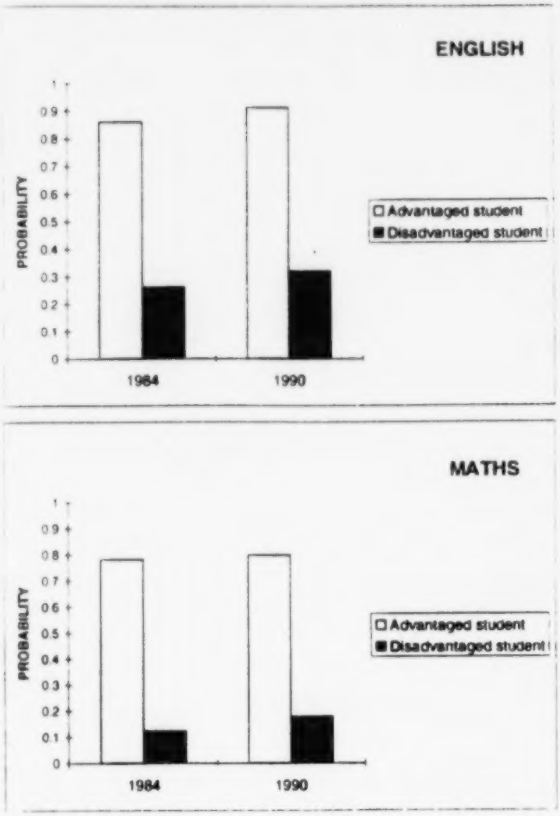
Figure 2
Changes in number of science awards received, 1984 - 1990



Obtaining O/S "passes" of 1-3 (A-C)

Although inequalities in obtaining awards declined substantially, inequalities in the top awards have been more resistant to change. Figure 3 compares the chances of a hypothetical advantaged and disadvantaged student to acquire a "pass" at grades 1, 2, or 3 of Ordinary and Standard Grade English and mathematics in 1984 and 1990. (In the Ordinary Grade system the nearest equivalent grades were called A, B, and C.) In contrast to award rates, "pass" rates show little change in social inequality. In 1984, the advantaged student's chances of obtaining a "pass" in English and mathematics were 86% and 78%, respectively, while the disadvantaged student's were 26% and 12%. In 1990, inequality was about the same, as the odds for the advantaged student were 91% and 80% while the odds for the disadvantaged student were 32% and 18% for English and mathematics, respectively.

Figure 3
Changes in probabilities of obtaining an O/S "pass" at 1-3/A-C, 1984 - 1990

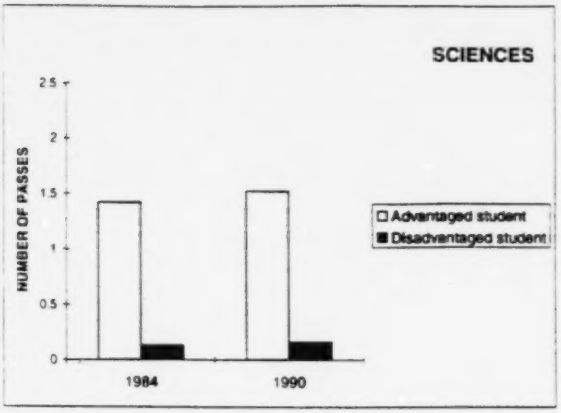


Similarly, there was little change in gap between the hypothetical advantaged and disadvantaged student in the number of "passes" at 1, 2, or 3 in the sciences at Ordinary or Standard Grade (science, biology, chemistry, or physics). Figure 4 displays this finding.

Implications

What do these results imply? Standard Grade has substantially improved the chances of students from disadvantaged backgrounds to study academic subjects in secondary school, and to receive formal certification for their efforts. At the end of compulsory schooling, disadvantaged students are not as far behind in academic studies as they were under the Ordinary Grade system.

Figure 4
Changes in number of science "passes" at 1-3/A-C, 1984 - 1990



However, declining inequality in awards has not been translated into more equality at the highest levels of the examinations. This is important because, typically, only the top students are pushed ahead to Highers on the pathway towards higher education. Hence, it may be that inequality of educational attainment over the life course has not changed, despite the Standard Grade reform.

The Standard Grade reform can be seen as part of a trend towards equality in Scottish secondary education. Higher Still may continue that trend by extending students' opportunities to obtain Higher awards and other certification. For example, students who do not receive credit-level awards at Standard Grade may succeed at Highers if they have a longer period of time to prepare, as Higher Still proposes. This may benefit disadvantaged students.

The study of Standard Grade shows, however, that while curriculum reform may go some ways towards reducing educational inequality, it does not fully resolve the problem. Changes in other aspects of the education system and society at large are needed to continue the improvement of opportunities for disadvantaged youth.

Further information

For more information, contact Adam Gamoran at the Centre for Educational Sociology, University of Edinburgh (Tel: 0131 650 4186), or directly by email "gamoran@ssc.wisc.edu". The views expressed in this *Briefing* are those of the author.

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Related publications

Croxford, L (1994) "Equal Opportunities in the Secondary-School Curriculum in Scotland, 1977-91", *British Educational Research Journal*, 20 (4), pp 371-391.

Gamoran, A (1996) "Curriculum Standardisation and Equality of Opportunity in Scottish Secondary Education, 1984-90", *Sociology of Education*, 69 (1), pp 1-21.

About this study

Information on student background and attainment are from student questionnaires administered in the SYPS surveys of 1985-1991. Data on the implementation of Standard Grade are from the school census of the Scottish Education Department. Only state-funded schools are included. The sample totalled 20,756 students in 412 schools. Most schools were included at all four time points, but each student was included at only one time point. Probabilities and means in Figures 1-4 are averaged across males and females, number of siblings, school sector and type, and school average socio-economic context (see Gamoran, 1996). This study was supported by the Fulbright Commission, the Spencer Foundation, the UK Economic and Social Research Council, and the US National Science Foundation. The SYPS was funded by the Scottish Office Education Department.

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